What is claimed is:

1) Apparatus for creating digital computer models comprising: at least one electronic camera; position and attitude measurement means; a video display; and a computer processor operable for: running CAD software, acquiring images from said electronic camera, receiving position and attitude information, computing perspective adjustments, combining imagery from said electronic camera with imagery from said CAD software, displaying combined imagery at said display; said electronic camera, position and attitude measurement means each in electronic communication with said computer.

2) Apparatus of claim 1 further comprising: a range measurement means, said computer further being operable for receiving range information relating to the distance between the apparatus and a point or position in the scene being addressed, said range measurement means is in communication with said computer.

3) Apparatus of claim 1, said displaying combined imagery includes forming a composite image of a real scene with a computer model graphic image superimposed thereon in a perspective which corresponds to the perspective of the scene as viewed from a user's position.

4) Computer modeling apparatus comprised of: a computer processor in communication with an electronic camera, position, attitude and range determining means; range determining means; and a video display,

said electronic camera having an imaging axis and an image plane, the imaging axis defining a system pointing direction, the intersection of the imaging axis and image plane defining a position reference point;

said computer arranged to run CAD software in conjunction with software arranged to communicate with said position, attitude and range determining means and further with said video display;

said position determining means arranged to determine the position of the reference point, said attitude determining means arranged to determine the system pointing direction, said range determining means arranged to determine the distance from the position reference point to a point on an object in a scene being addressed, and said display having a substantially planar image field with its normal direction aligned to the pointing direction.

5) A computer apparatus of claim 4, said computer including a software object model responsive to position, attitude and range of the apparatus.

6) A computer apparatus of claim 5, said response being a translation of perspective and size whereby the perspective of the scene being addressed from the camera viewpoint corresponds to the perspective and size of the displayed model.

7) Computer modeling methods comprising the steps: addressing a scene with an electronic camera; measuring position and attitude of said camera; recording a first point associated with said measurements; changing either the position state or attitude state of the camera; recording at least one other point associated with the new position and attitude state; and displaying said points recorded superimposed with an image captured with said electronic camera.

8) Computer modeling methods of claim 7, further comprising a step to re-acquire a previously defined point or model from a new position to improve the accuracy by averaging.